



Water - Essential for Life

Lyon County Water District Water Quality Report for year 2014

P.O. Box 489
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Meetings: Water District Office, 5464 U.S. 62 West, Kuttawa, KY 42055
Meeting Dates and Time: 2nd Tuesday of each month 8:00 AM

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This report is designed to inform the public about the quality of water and services provided on a daily basis. Our commitment is to provide our customers with a safe, clean, and reliable supply of drinking water. We want to assure that we will continue to monitor, improve, and protect the water system and deliver a high quality product. Water is

the most indispensable product in every home and we ask everyone to be conservative and help us in our efforts to protect the water source and the water system. We purchase our water from 5 sources; Princeton Water and Wastewater, City of Kuttawa, Eddyville Water Department, Crittenden-Livingston Water District and Barkley Lake Water District. Princeton Water and Wastewater utilizes water from Cumberland River and Lake Barkley. They all represent surface water sources. An analysis of Princeton's water supply indicates that there are 34 potential contaminant sites with the possibility of contaminating the water supply located within the water shed. Sources of high potential impact include ground storage tank facilities, hazardous material transfer and storage marinas and boat docks, and landfills all of which share the possibility of leakage, spill or leaching of contaminants. Source of moderate to low impact include those from agriculture operations, failing septic systems, and KPDES permitted dischargers. Our complete source water assessment plan is available at Princeton Water office 270-365-9301, located at 101 E. Market St. in Princeton, Caldwell County Water District 270-365-9381 and the Pennyriple Area Development District Office. Kuttawa Water Department treats surface water from Lake Barkley. A source water assessment plan has been developed for our water system by the Pennyriple Area Development District. An analysis of the overall susceptibility to contamination of Kuttawa's water supply indicates that potential impacts range from low to high. Sources of high to medium potential impact include bridges and culverts within the critical zone, because of the potential for chemical spill in the case of an accident. Another concern is the potential for chemical spills and petroleum discharges from heavy barge traffic. Sources of low to medium potential impact include the potential for runoff contamination due to the use of pesticides and herbicides for agricultural activity and the wastewater discharges within the watershed. This is a summary of the susceptibility analysis. The complete source water assessment plan is located at the Kuttawa Wastewater Treatment Plant. The Kuttawa Water Department routinely monitors for contaminants in your drinking water according to Federal and State laws. The Eddyville Water Department treats surface water from lake Barkley. A source water assessment plan has been developed for our water system by the Pennyriple Area Development District. An analysis of the overall susceptibility to contamination of Eddyville's water supply indicates that potential impacts range from low to high. Sources of high to medium potential impact include bridges and culverts within the critical zone, because of the potential for chemical spill in the case of an accident. Another concern is the potential for chemical spills and petroleum discharges from heavy barge traffic. Sources of low to medium potential impact include the potential for runoff contamination due to the use of pesticides and herbicides for agricultural activity and the wastewater discharges within the watershed. This is a summary of the susceptibility analysis. The complete source water assessment plan is located at Pennyriple Area Development District, Hopkinsville, KY. (270) 886-9484. The Eddyville Water Department routinely monitors for contaminants in your drinking water according to federal and state laws.

The source of water for Crittenden-Livingston Water District is surface water from the lower Cumberland River. The treatment plant is located in Pinkneyville. An analysis of the susceptibility of the Crittenden-Livingston County Water District water supply to contamination sources indicates that the susceptibility is generally high. A susceptibility analysis evaluates the potential for contaminants to enter the water supply. There are twenty types of potential contaminants in the protection area for the Crittenden-Livingston County Water District water supply. These types include bridges, large capacity septic tanks, underground storage tanks, coast guard stations, landfills, chemical storage facilities, rock quarries and mines, auto repair facilities, wastewater treatment plants, barge traffic, asphalt plant, and highways. The degree of hazard ranges from moderate to high due to the potential for chemical spills. This is a summary of the source water protection plan. The complete report is available for review at the Crittenden-Livingston County Water District office. Barkley Lake Water District utilizes surface water from Lake Barkley. An analysis of Barkley Lake Regional Water District's water supply indicates there are six types of potential contaminant sites with the possibility of contaminating the water supply located within the water shed. Areas of high concern located within the watershed are underground storage tanks and rock quarries. Other areas of concern are the water treatment plant of the district, roads, bridges, and highways that pose risks of the possibility of hazardous materials entering the water supply from traffic accidents, spills and illegal dumping, in addition to households which are not connected to a public waste system present a source of contamination due to the possibility of failing septic systems. Farms located within the watershed present the possibility of siltation, pathogens, pesticides and fertilizers entering the water supply. The complete plan is available for inspection at the Barkley Lake Regional Water District Office at 1420 Canton Road, Cadiz, Kentucky.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects may be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and may pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include: Microbial contaminants, such as viruses and bacteria, (sewage plants, septic systems, livestock operations, or wildlife). Inorganic contaminants, such as salts and metals, (naturally occurring or from stormwater runoff, wastewater discharges, oil and gas production, mining, or farming). Pesticides and herbicides, (stormwater runoff, agriculture or residential uses). Organic chemical contaminants, including synthetic and volatile organic chemicals, (by-products of industrial processes and petroleum production, or from gas stations, stormwater runoff, or septic systems). Radioactive contaminants, (naturally occurring or from oil and gas production or mining activities). In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water to provide the same protection for public health.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Some or all of these definitions may be found in this report:

Maximum Contaminant Level (MCL) - the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG) - the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Maximum Residual Disinfectant Level (MRDL) - the highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG) - the level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Below Detection Levels (BDL) - laboratory analysis indicates that the contaminant is not present.

Not Applicable (N/A) - does not apply.

Parts per million (ppm) - or milligrams per liter, (mg/L). One part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) - or micrograms per liter, (µg/L). One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Parts per trillion (ppt) - one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.

Parts per quadrillion (ppq) - one part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in \$10,000,000,000,000.

Picocuries per liter (pCi/L) - a measure of the radioactivity in water.

Millirems per year (mrem/yr) - measure of radiation absorbed by the body.

Million Fibers per Liter (MFL) - a measure of the presence of asbestos fibers that are longer than 10 micrometers.

Nephelometric Turbidity Unit (NTU) - a measure of the clarity of water. Turbidity has no health effects. However, turbidity can provide a medium for microbial growth. Turbidity is monitored because it is a good indicator of the effectiveness of the filtration system.

Variances & Exemptions (V&E) - State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

Action Level (AL) - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system shall follow.

Treatment Technique (TT) - a required process intended to reduce the level of a contaminant in drinking water.

Information About Lead:

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Your local public water system is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

Spanish (Español) Este informe contiene información muy importante sobre la calidad de su agua beber. Tradúzcalo o hable con alguien que lo entienda bien.

The data presented in this report are from the most recent testing done in accordance with administrative regulations in 401 KAR Chapter 8. As authorized and approved by EPA, the State has reduced monitoring requirements for certain contaminants to less often than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data in this table, though representative, may be more than one year old. Unless otherwise noted, the report level is the highest level detected. We purchase water from Princeton Water and Wastewater =A, City of Kuttawa =B, Eddyville Water Department =C, Crittenden-Livingston Water District =D, Barkley Lake Water District =E. Lead, Copper and Chlorine tests were taken in the Lyon County Water District distribution system.

	Allowable Levels	Source	Highest Single Measurement	Lowest Monthly %	Violation	Likely Source of Turbidity
Turbidity (NTU) TT * Representative samples of filtered water	No more than 1 NTU* Less than 0.3 NTU in 95% monthly samples	A= B= C= D= E=	0.2 0.29 0.14 0.14 0.5	100 100 100 100 100	No No No No No	Soil runoff

Regulated Contaminant Test Results

Contaminant [code] (units)	MCL	MCLG	Source	Report Level	Range of Detection	Date of Sample	Violation	Likely Source of Contamination
Microbiological Contaminants								
Radioactive Contaminants								
Beta photon emitters (mrem/yr)	4	0	B=	0.3	0.3 to 0.3	Feb-11	No	Decay of natural and man-made deposits
Alpha emitters [4000] (pCi/L)	15	0	A= B= C= D= E=	0.3 0.3 4.7 4.7 4.7	0.3 to 0.3 0.3 to 0.3 4.7 to 4.7 4.7 to 4.7 4.7 to 4.7	April-10 Feb-11 July-14 July-14 July-14	No No No No No	Erosion of natural deposits
Combined radium	5	0	A= B= C= D= E=	0.6 0.6 3.0 4.7 4.7	0.6 to 0.6 0.6 to 0.6 3.0 to 3.0 4.7 to 4.7 4.7 to 4.7	Feb-11 Feb-11 July-14 July-14 July-14	No No No No No	Erosion of natural deposits
Uranium (µg/L)	30	0	A=	0.3	0.3 to 0.3	April-10	No	Erosion of natural deposits

Inorganic Contaminants

Arsenic [1005] (ppb)	10	N/A	B= C= E=	0.5 0.8 0.6	0.5 to 0.8 0.8 to 0.8 0.6 to 0.6	2014 Feb-14 Aug-14	No No No	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium [1010] (ppm)	2	2	A= B= C= D= E=	0.018 0.023 0.028 0.026 0.02	0.018 to 0.023 0.023 to 0.028 0.028 to 0.026 0.026 to 0.02 0.02 to 0.02	Feb-14 Feb-14 Feb-14 June-14 Aug-14	No No No No No	Drilling wastes; metal refineries; erosion of natural deposits
Chromium [1020] (ppb)	100	100	C=	7.2	7.2 to 7.2	Feb-14	No	Discharge from steel and pulp mills; erosion of natural deposits
Copper [1022] (ppm)	AL = 1.3	1.3		0.101 (90 th percentile)	0 to 0.162	Sept-12	No	Corrosion of household plumbing systems
Cyanide [1024] (ppb)	200	200	C=	20	20 to 20	Feb-14	No	Discharge from steel/metal factories; plastic and fertilizer factories
Fluoride [1025] (ppm)	4	4	A= B= C= D= E=	0.84 0.5 0.6 1.1 0.9	0.84 to 0.5 0.5 to 0.6 0.6 to 1.1 1.1 to 0.7 0.7 to 1.1	Feb-14 Jan-14 2014 Jan-14 2014	No No No No No	Water additive which promotes strong teeth
Nitrate [1040] (ppm)	10	10	A= B= C= D= E=	0.96 0.4 0.8 0.3 0.05	0.96 to 0.4 0.4 to 0.6 0.6 to 0.3 0.3 to 0 0.04 to 0.5	Feb-14 Feb-14 Nov-14 June-14 Feb-14	No No No No No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium [1045] (ppb)	50	50	E=	1.2	1.2 to 1.2	2014	No	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines

Synthetic Organic Contaminants including Pesticides and Herbicides

Atrazine [2050] (ppb)	3	3	C= D=	0.25 0.74	0 to 0.3 0 to 0.74	May-10 July-14	No No	Runoff from herbicide used on row crops
Ethylene dibromide [2946] (ppt)	50	0	D=	30	30 to 30	July-14	No	Discharge from petroleum refineries

Volatile Organic Contaminants

Tetrachloroethylene [2987] (ppb)	5	0	C=	0.9	0 to 0.9	Feb-14	No	Leaching from PVC pipes; discharge from factories and dry cleaners
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Disinfectants/Disinfection Byproducts and Precursors

Total Organic Carbon (ppm) (report level=lowest avg. range of monthly ratios)	TT*	N/A	A= B= C= D= E=	1.14 1.52 3.5 1.35 1.61	.80 to 1.39 0.19 to 2.05 1.00 to 5.81 -0.33 to 1.75 1.07 to 2.48	N/A	No No No No No	Naturally present in environment.
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*Monthly ratio is the % TOC removal achieved to the % TOC removal required. Annual average of the monthly ratios must be 1.00 or greater for compliance.

Chlorine (ppm)	MRDL = 4	MRDLG = 4		1.62	0.59 to 2.29	N/A	No	Water additive used to control microbes.
HAA (ppb) Stage 2 [Haloacetic acids]	60	N/A		44 (high site average)	30 to 56.9 (range of individual sites)	N/A	No	Byproduct of drinking water disinfection
TTHM (ppb) Stage 2 [Total Trihalomethanes]	60	N/A		52 (high site average)	23.7 to 80 (range of individual sites)	N/A	No	Byproduct of drinking water disinfection

Unregulated Contaminant Results (UCMR3)

	average	range (ppb)	date
vanadium	A= 0.562	0.31 to 0.893	Oct-14
strontium	A= 106.875	0 to 130	June-14
chromium 6	A= 0.054	0 to 0.11	March-14
total chromium	A= 0.036	BDL to 0.286	Oct-14

EPA has not established drinking water standards for unregulated contaminants. There are no MCL's and therefore no violations if found.

The City of Princeton has sampled for a series of unregulated contaminants. Unregulated contaminants are those that don't yet have a drinking water standards set by EPA. The purpose of monitoring for these contaminants is to help EPA decide whether the contaminants shloud have a standard. As our customers, you have the right to know that these Data are available. If you are interested in examining the results please contact our office during regular business hours.

In 2014 we received a NOV (Notice of Violation) from our primacy agency, Kentucky Division of Water. We neglected to provide all the certification information for the 2013 CCR. The URL listed on the CCR Certification was incorrect. There were no health effects due to this oversight. Remedial actions included detailing this NOV in the 2014 CCR. Our water system violated one or more drinking water standards over the past year. Even though these were not emergencies, as our customers, you have a right to know what happened and what we did to correct these situations.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the compliance period of 04/012014-04/30/14 we submitted 7 of 8 required COLIFORM (TCR) samples and therefore cannot be sure of the quality of our drinking water during that time.

There is nothing you need to do at this time. You do not need to use an alternative (e.g., bottled) water supply.

What happened? Who is at risk? What is being done?

During the compliance period of 04/012014-04/30/14 we submitted 7 of 8 COLIFORM (TCR) required samples. There were no health effects due to this oversight. However, the water quality for this period in time is unknown. Remedial actions included performing Public Notification and the required certification.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.